

**Abstract Title Page.**

**Title:** An Examination of the Effectiveness of Emergent Literacy Intervention for Pre-Kindergarteners at Risk for Reading Delays

## **Abstract Body.**

### **Background / Context:**

Preschool reading readiness is an issue with growing interest. The preschool years provide an opportune time when reading difficulties are more easily altered through exposure to early literacy skills. Explicit instruction in fundamental skills can minimize the risk of future reading failure before the reading achievement gap widens and it becomes more difficult for struggling early readers to “catch up” to their peers. Although early intervention is a promising method to diminish the reading achievement gap in at-risk populations of young readers, very little research has focused specifically on emergent literacy intervention with preschoolers. Moreover, little work has examined the long-term effects of such interventions. Numerous studies evidence that early identification of risk for future reading delay and targeted early intervention can improve the reading outcomes of children at risk for reading failure yet gaps remain in the research as to the most effective and appropriate instructional practices for early literacy intervention programs. Questions remain regarding the appropriate skills, dosage, and methods that are necessary to maintain positive treatment effects through the early elementary years. This paper extends our previous research by examining the kindergarten performance of a cohort of children from a multiyear research study in which preschoolers at-risk for early literacy failure received targeted supplemental instruction.

### **Purpose / Objective / Research Question / Focus of Study:**

We previously reported findings from the first three years of our experimental early literacy intervention study that was implemented with successive cohorts of preschoolers identified through universal screening as having a risk for future reading delays. Results from the first three years of our study indicate significant treatment and dosage effects. The goal of the present study is to examine the maintenance of the positive effects found for children from a cohort of the study. Of particular interest is whether children who completed our prekindergarten early literacy intervention go on to complete kindergarten with developmentally appropriate levels of reading readiness and whether children’s response to our intervention is predictive of their kindergarten reading achievement. This paper reports on the follow up of this cohort through the completion of kindergarten along with a comparison of their third grade reading achievement to district and state norms.

### **Setting:**

Preschool and child care sites were included as part of a large scale early literacy initiative . Sites were selected and matched according to zip code to balance income differences and as such sites serving a range of varying economic levels and ethnic groups were included. Participants were screened during the 2007-2008 school year at their preschool site during regular school hours.

### **Population / Participants / Subjects:**

*Description of the participants in the study: who, how many, key features, or characteristics.*

Project teachers screened 2,777 children in the Fall of their prekindergarten year of which 429 children scored in the at-risk range on the Get Ready To Read early literacy screener (GRTR; Whitehurst, 2001) which qualified them to receive our targeted multisensory Tier 2 intervention.

Dosage and treatment analyses include data from 374 of these at-risk participants and were published previously. The current follow up was conducted on a smaller sample of children who remained in the study through their Kindergarten year ( $n= 276$ ). The final sample included more boys than girls (64.5% boys). The majority of the sample came from homes in which English was the primary language (87.1%) and 44.6% were white, 31.9% black, 12.3% Hispanic or Latino, 4% Asian, 7.2% multi ethnic/other. Lastly, 21.9% of participants had a family history of learning disabilities.

### **Intervention / Program / Practice:**

Children identified as being at risk for reading failure based on the screening measure received a multisensory systematic intervention designed to improve multiple emergent literacy skills such as letter names and sounds, syllable counting and segmentation, rhyming, alliteration, blending, and onset-rime. Schools were randomly assigned to provide either fall or spring intervention according to a delayed control group design. The targeted, explicit, and scripted small group curriculum was delivered by highly trained and experienced project teachers and consisted of eighteen 30-minute lessons provided over nine weeks. Groups consisted of one to four children.

### **Research Design:**

Prekindergarten schools were randomly assigned to provide either fall or spring intervention according to a delayed control group design. Given this design, all children identified as having risk for future reading failure received intervention. Although this design did not incorporate a true control or comparison group, we were interested in how intervention children performed long term. A cohort of intervention children were followed through their completion of kindergarten and their third grade spring standardized state achievement results were also collected.

### **Data Collection and Analysis:**

Children who remained in the school district were followed through their completion of kindergarten ( $n = 276$ ). State administered standardized test scores (DIBELS) were collected during the fall, winter, and spring assessment periods of their kindergarten year. Children's performance on the third grade spring standardized state achievement test were also collected ( $n = 126$ ). Analyses focused first on descriptive analyses of children's performance on each of the DIBELS indicators through their completion of kindergarten. Data was disaggregated by sex, race/ethnicity, income, and response to our preschool intervention so that we could examine how specific groups of children performed in kindergarten. Next a series of hierarchical regressions were conducted to determine if children's response to intervention was predictive of their kindergarten performance on the DIBELS indicators. Covariates included DIBELS baseline performance, age, sex, race, elementary school, and income with response to intervention entered as the primary predictor variable. Lastly, descriptive analyses were conducted that compared the performance of children who remained in the sample in third grade on an assessment of reading achievement to state and district norms.

**Findings / Results:**

Children who received our prekindergarten Tier2 early literacy intervention were performing in the developmentally appropriate range in kindergarten. A systematic increase in performance over time was evident for each measure. The mean scores of children who received preschool early literacy intervention signify low risk of reading failure on each DIBELS indicator at each time point with the exception of the Winter assessment of ISF in which children scored in the moderate risk range and the Fall assessment of LNF in which children scored in the above average range. A MANOVA was conducted to compare the frequencies of children (by sex, ethnicity, income, and response to intervention) within each DIBELS risk category. No significant differences in DIBELS risk categories were found between boys and girls, racial/ethnic group, or income however a main effect was found for response to intervention such that children who did not respond to our preschool intervention were in higher risk categories when compared to responders. Next a series of hierarchical regressions were conducted to determine if children's response to our preschool intervention was predictive of their kindergarten performance on each DIBELS indicator. Children's response to intervention explained 2%, a small but significant amount, of the unique variance in their kindergarten Spring LNF scores, over that accounted for by the covariates. Similarly, response to intervention also explained 1.7% of the unique variance in Spring NWF scores. Lastly, follow up descriptive analyses of children's third grade reading achievement compared intervention children to district and state norms. The sample overall performed close to grade level proficiency with a mean developmental scale score of 196.18 ( $SD = 16.20$ ) while the minimum score for grade level performance was 198. Children who completed preschool early literacy intervention performed comparably to both the state and district norms when developmental scale scores and achievement levels were considered.

**Conclusions:**

Our findings indicate that children who received prekindergarten early literacy intervention were performing in the developmentally appropriate range in kindergarten with scores indicative of low-risk for future reading delays. Children's response to our intervention was also predictive of their kindergarten letter name fluency and nonsense word fluency. In addition, examination of children's third grade reading achievement indicates comparable performance to both district and state norms.

## **Appendices**

### **Appendix A. References**

Whitehurst, G. (2001). *Get Ready to Read*. New York: Pearson Early Learning.

